

Application No: 10/034,316

Docket No.: Q130-US1

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b.) Amendments to the Specification

Page 4, beginning line 4:

b1

The flame retardant material is a liquid at room temperature and pressure and is substantially immiscible in the non-aqueous electrolyte solution. Preferably, the flame retardant material is a halogen-containing compound. Preferred halogen-containing compounds contain perfluoroalkyl groups or perfluoroether groups. The halogen-containing compound is present in an amount by weight of non-aqueous solvent in a range of from about 1 to about 99 wt %, preferably from about 1 to about 70 wt %, even more preferably from about 10 to about 60 wt % and even more preferably from about 20 to about 40 wt%.

b2

(Page 14, beginning line 3:)

Preferably the energy storage device in accordance with one embodiment of the present invention is a battery in which the first electrode member is a negative electrode containing a material selected from the group consisting of lithium metal, a lithium alloy, a carbon material that can be doped and undoped with lithium ions, a metal oxide that can be doped and undoped with lithium ions, and silicon that can be doped and undoped with lithium ions. Preferably, If the negative electrode contains a metal oxide, the metal oxide preferably is chosen from the group consisting of tin oxide and titanium oxide. Preferably, a carbon material that can be doped and undoped with lithium ions is used as the negative pole. Suitable carbon for the negative pole includes graphite or amorphous carbon, activated carbon, carbon fibers, carbon black and meso-carbon, micro-beads, etc.

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Page 15, beginning line 1:

Energy storage devices may be prepared using the electrolyte system of the present invention as follows. A method of making an energy storage device in accordance with the present invention comprises providing an electrode assembly including a first electrode member, a second electrode member, and a separator member physically and electrically separating the first electrode member from the second electrode member but capable of allowing ionic conductivity contact between the first electrode member and the second electrode member, placing the assembly in a casing, and filling the casing with the electrolyte system that is herein described by first, filling the casing at least partially with the non-aqueous electrolyte solution, waiting a period of time sufficient for the non-aqueous electrolyte solution to penetrate one or more pores of the electrode assembly, and then adding the flame retardant material to the casing. After filling the casing at least partially with the non-aqueous electrolyte solution, the energy storage device may be charged either before or after adding the flame retardant material to the casing.

Page 20, Table 1:

Table 1

Additive name	Discharge capacity (%)	Safety level	EC ratio (wt%)	DEC ratio (wt%)	LiPF ₆ ratio (wt%)	Additive ratio (%)
none	100.0	4	31.2	53.7	15.1	0
perfluoro-1,3-dimethylcyclohexane	96.3	1	21.84	37.59	10.57	30
	93.7	2	21.84	37.59	10.57	30
FC-70	99.5	2	21.84	37.59	10.57	30
	100.5	2	21.84	37.59	10.57	30

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Page 28, the Abstract:

A secondary cell employs a non-aqueous electrolyte solution including a non-aqueous solvent and a salt, and a flame retardant material that is a liquid at room temperature and pressure and substantially immiscible in the non-aqueous electrolyte solution. The non-aqueous electrolyte solution is formed by dissolving a salt, preferably an alkali metal salt, in a non-aqueous solvent. The non-aqueous solvent preferably includes a cyclic carbonate and/or a linear carbonate. The cyclic carbonate preferably contains an alkylene group with 2 to 5 carbon atoms, and the linear carbonate preferably contains a hydrocarbon group with 1 to 5 carbon atoms. Preferred salts include LiPF₆ and LiBF₄ at a concentration between from about 0.1 to about 3.0 moles/liter in the non-aqueous solvent. The flame retardant material is preferably a halogen-containing compound, and preferred halogen containing compounds are perfluoroalkyl groups and perfluoroether groups present in an amount per weight of non-aqueous solvent in a range of from about 1 to about 99 wt %.